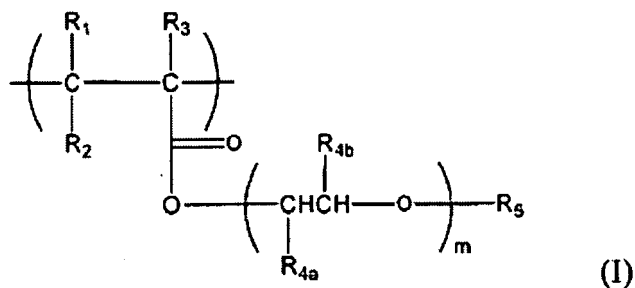


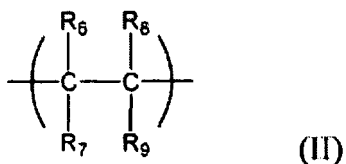
AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A composition for a polymer solid electrolyte comprising a copolymer having repeating units represented by Formula (I):



wherein each of R_1 to R_3 independently represents a hydrogen atom or a C1-C10 hydrocarbon group; R_1 and R_3 may bond to one another to form a ring; each of R_{4a} and R_{4b} independently represents a hydrogen atom or a methyl group; R_5 represents a hydrogen atom, a hydrocarbon group, an acyl group or a silyl group; m is an integer of 1 to 100, and each of R_{4a} and each of R_{4b} may be the same or different when m is 2 or more;

and repeating units represented by Formula (II):



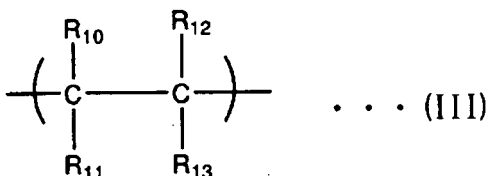
wherein each of R_6 and R_8 independently represents a hydrogen atom or a C1-C10 hydrocarbon group; R_6 and R_8 may bond to one another to form a ring; R_7 represents a hydrogen atom, a C1-C10 hydrocarbon group, a hydroxyl group, a hydrocarbonoxy group, a carboxyl group, an acid anhydride group, an amino group, an ester group, or an organic group having at least one functional group

selected from the group consisting of hydroxyl group, carboxyl group, three-membered-ring epoxy group, acid anhydride group and amino group; and R₉ represents an organic group having at least one functional group selected from the group consisting of hydroxyl group, carboxyl group, three-membered-ring epoxy group, acid anhydride group and amino group;

and an electrolyte salt,

wherein the copolymer forms a microphase-separated structure,

wherein the copolymer having the repeating units represented by the Formula (I) and the Formula (II) is a copolymer having an arrangement of block chains in an order of B1, C1, A, C2, and B2, wherein the block chain A has the repeating unit represented by the Formula (I); the block chain B1 has the repeating unit represented by the Formula (II), the block chain B2 has the repeating unit represented by the Formula (II) which may be the same or different from B1; the block chain C1 has a repeating unit represented by the Formula (III)

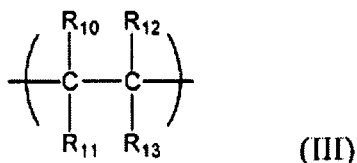


wherein each of R₁₀ to R₁₂ independently represents a hydrogen atom or a C1-C10 hydrocarbon group, and R₁₃ represents an aryl group or a heteroaryl group; and the block chain C2 has a repeating unit represented by the Formula (III) which may be the same or different from C1.

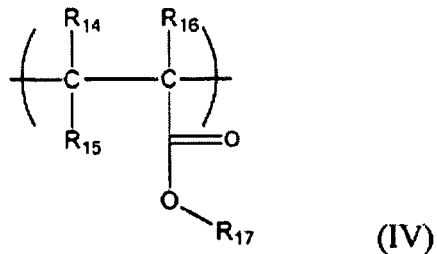
2-8. (Canceled)

9. (Previously Presented) The composition for a polymer solid electrolyte according to claim 1, the copolymer further comprising a repeating unit derived from a polymerizable unsaturated monomer, which is different from the repeating units represented by Formula (I) and Formula (II).

10. (Previously Presented) The composition for a polymer solid electrolyte according to claim 9, wherein the repeating unit derived from polymerizable unsaturated monomers comprises at least one repeating unit selected from the group consisting of units represented by Formula (III)



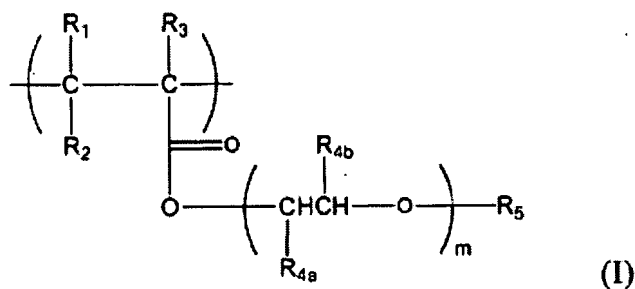
wherein each of R₁₀ to R₁₂ independently represents a hydrogen atom or a C1-C10 hydrocarbon group, and R₁₃ represents an aryl group or a heteroaryl group;
and units represented by Formula (IV)



wherein each of R₁₄ to R₁₆ independently represents a hydrogen atom or a C1-C10 hydrocarbon group; R₁₄ and R₁₆ may bond to one another to form a ring; and R₁₇ represents a C1-C12 alkyl group, an aryl group, an alicyclic hydrocarbon group, or a heterocyclic group.

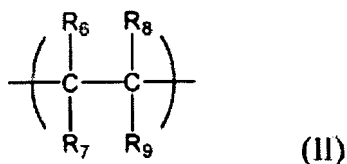
11-24. (Canceled)

25. (Currently Amended) A polymer solid electrolyte comprising: a copolymer having repeating units represented by Formula (I):



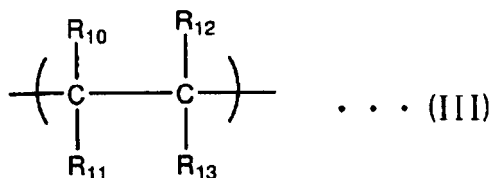
wherein each of R_1 - R_3 independently represents a hydrogen atom or a C1-C10 hydrocarbon group; R_1 and R_3 may bond to one another to form a ring; each of R_{4a} and R_{4b} independently represents a hydrogen atom or a methyl group; R_5 represents a hydrogen atom, a hydrocarbon group, an acyl group or a silyl group; m is an integer of 1 to 100, and each of R_{4a} and R_{4b} may be the same or different when m is 2 or more,

and repeating units represented by Formula (II):



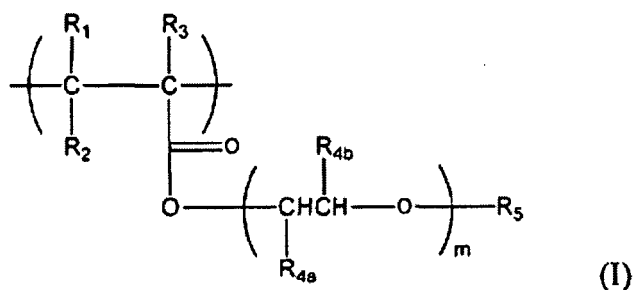
wherein each of R_6 and R_8 independently represents a hydrogen atom or a C1-C10 hydrocarbon group; R_6 and R_8 may bond to one another to form a ring; R_7 represents a hydrogen atom, a C1-C10 hydrocarbon group, a hydroxyl group, a hydrocarbonoxy group, a carboxyl group, an acid anhydride group, an amino group, an ester group, or an organic group having at least one functional group selected from the group consisting of hydroxyl group, carboxyl group, three-membered-ring epoxy group, acid anhydride group and amino group; and R_9 represents an organic group having at least one functional group selected from the group consisting of hydroxyl group, carboxyl group, three-membered-ring epoxy group, acid anhydride group and amino group;

and an electrolyte salt,
wherein the copolymer forms a microphase-separated structure,
wherein the copolymer having the repeating units represented by the Formula (I) and the Formula (II) is a copolymer having an arrangement of block chains in an order of B1, C1, A, C2, and B2,
wherein the block chain A has the repeating unit represented by the Formula (I); the block chain B1 has the repeating unit represented by the Formula (II), the block chain B2 has the repeating unit represented by the Formula (II) which may be the same or different from B1; the block chain C1 has a repeating unit represented by the Formula (III):



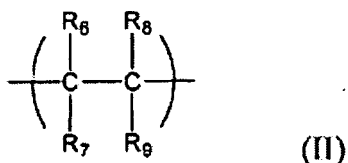
wherein each of R₁₀ to R₁₂ independently represents a hydrogen atom or a C₁-C₁₀ hydrocarbon group, and R₁₃ represents an aryl group or a heteroaryl group; and the block chain C2 has a repeating unit represented by the Formula (III) which may be the same or different from C1.

26. (Currently Amended) A polymer solid electrolyte comprising: a cross-linked polymer obtained by a reaction of a cross-linking agent with a copolymer having repeating units represented by Formula (I):



wherein each of R₁-R₃ independently represents a hydrogen atom or a C1-C10 hydrocarbon group; R₁ and R₃ may bond to one another to form a ring; each of R_{4a} and R_{4b} independently represents a hydrogen atom or a methyl group; R₅ represents a hydrogen atom, a hydrocarbon group, an acyl group or a silyl group; m is an integer of 1 to 100, and each of R_{4a} and each of R_{4b} may be the same or different when m is 2 or more;

and repeating units represented by Formula (II):



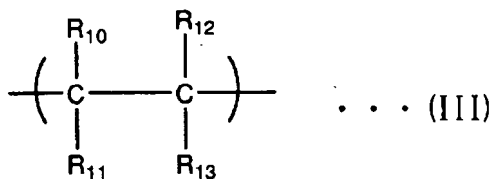
wherein each of R₆ and R₈ independently represents a hydrogen atom or a C1-C10 hydrocarbon group; R₆ and R₈ may bond to one another to form a ring; R₇ represents a hydrogen atom, a C1-C10 hydrocarbon group, a hydroxyl group, a hydrocarbonoxy group, a carboxyl group, an acid anhydride group, an amino group, an ester group, or an organic group having at least one functional group selected from the group consisting of hydroxyl group, carboxyl group, three-membered-ring epoxy group, acid anhydride group and amino group; and R₉ represents an organic group having at least one functional group selected from the group consisting of hydroxyl group, carboxyl group, three-membered-ring epoxy group, acid anhydride group and amino group;

and an electrolyte salt,

wherein the copolymer forms a microphase-separated structure,

wherein the copolymer having the repeating units represented by the Formula (I) and the Formula (II) is a copolymer having an arrangement of block chains in an order of B1, C1, A, C2, and B2,

wherein the block chain A has the repeating unit represented by the Formula (I); the block chain B1 has the repeating unit represented by the Formula (II), the block chain B2 has the repeating unit represented by the Formula (II) which may be the same or different from B1; the block chain C1 has a repeating unit represented by the Formula (III):

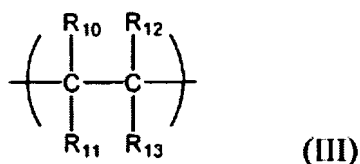


wherein each of R₁₀ to R₁₂ independently represents a hydrogen atom or a C1-C10 hydrocarbon group, and R₁₃ represents an aryl group or a heteroaryl group; and the block chain C2 has a repeating unit represented by the Formula (III) which may be the same or different from C1.

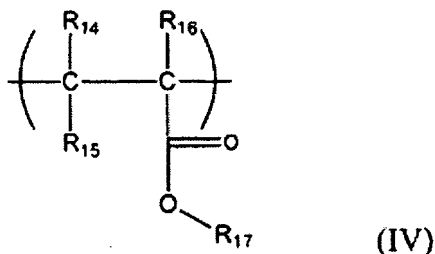
27-32. (Canceled)

33. (Previously Presented) The polymer solid electrolyte according to claim 25, wherein the copolymer further comprises a repeating unit derived from a polymerizable unsaturated monomer, which is different from the repeating units represented by Formula (I) and Formula (II).

34. (Previously Presented) The polymer solid electrolyte according to claim 33, wherein the repeating unit derived from polymerizable unsaturated monomers is at least one repeating unit selected from the group consisting of units represented by Formula (III)



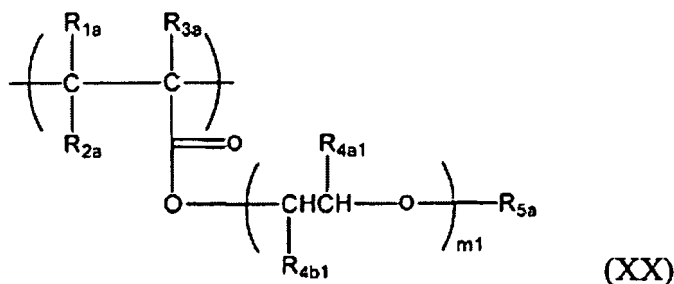
wherein each of R₁₀ to R₁₂ independently represents a hydrogen atom or a C1-C10 hydrocarbon group, and R₁₃ represents an aryl group or a heteroaryl group;
 and units represented by Formula (IV)



wherein each of R₁₄ to R₁₆ independently represents a hydrogen atom or a C1-C10 hydrocarbon group; R₁₄ and R₁₆ may bond to one another to form a ring; and R₁₇ represents a C1-C12 alkyl group, an aryl group, an alicyclic hydrocarbon group, or a heterocyclic group.

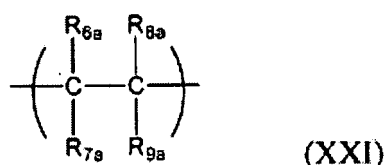
35-55. (Canceled)

56. (Currently Amended) A polymer solid electrolyte battery comprising: a solid electrolyte made into a film using the composition for a polymer solid electrolyte according to claim 1; and an electrode which comprises an electrode-activating compound and a copolymer including a disposition of block chains arranged in an order of B11, A11 and C11, wherein the block chain A11 includes a repeating unit represented by Formula (XX)



wherein each of R_{1a} to R_{3a} independently represents a hydrogen atom or a C1-C10 hydrocarbon group; R_{1a} and R_{3a} may bond to one another to form a ring; each of R_{4a1} and R_{4b1} independently represents a hydrogen atom or a methyl group; R_{5a} represents a hydrogen atom, a hydrocarbon group, an acyl group or a silyl group; m represents an integer of 2 to 100; and R_{4a1} and R_{4b1} may be the same or different from each other,

and the block chain B11 includes a repeating unit represented by Formula (XXI):

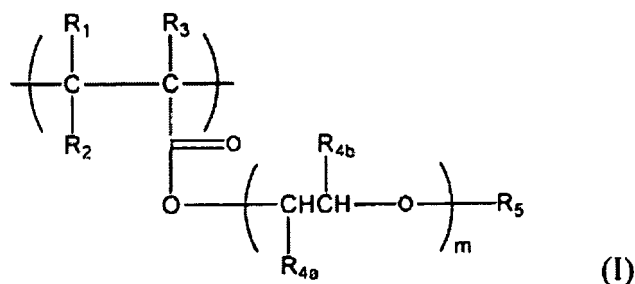


wherein each of R_{6a} to R_{8a} independently represents a hydrogen atom or a C1-C10 hydrocarbon group; and R_{9a} represents an aryl group,

and the block chain C11 includes arbitrary components.

57-76. (Canceled)

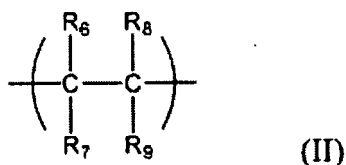
77. (Previously Presented) A copolymer having an arrangement of block chains in an order of B1, C1, A, C2, and B2, wherein the block chain A has a repeating unit represented by Formula (I):



wherein each of R_1 - R_3 independently represents a hydrogen atom or a C1-C10 hydrocarbon group; R_1 and R_3 may bond to one another to form a ring; each of R_{4a} and R_{4b} independently represents a

hydrogen atom or a methyl group; R_5 represents a hydrogen atom, a hydrocarbon group, an acyl group or a silyl group; m is an integer of 1 to 100, and each of R_{4a} and each of R_{4b} may be the same or different when m is 2 or more;

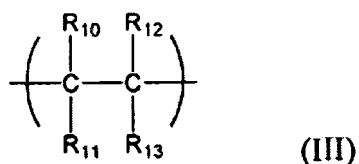
the block chain B1 has a repeating unit represented by Formula (II):



wherein each of R_6 and R_8 independently represents a hydrogen atom or a C1-C10 hydrocarbon group; R_6 and R_8 may bond to one another to form a ring; R_7 represents a hydrogen atom, a C1-C10 hydrocarbon group, a hydroxyl group, a hydrocarbonoxy group, a carboxyl group, an acid anhydride group, an amino group, an ester group, or an organic group having at least one functional group selected from the group consisting of hydroxyl group, carboxyl group, three-membered-ring epoxy group, acid anhydride group and amino group; and R_9 represents an organic group having at least one functional group selected from the group consisting of hydroxyl group, carboxyl group, three-membered-ring epoxy group, acid anhydride group and amino group;

the block chain B2 has a repeating unit represented by Formula (II) which may be the same as or different from B1;

the block chain C1 has a repeating unit represented by Formula (III):



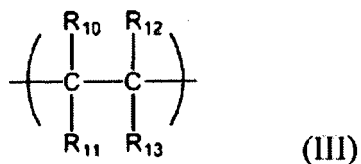
wherein each of R_{10} to R_{12} independently represents a hydrogen atom or a C1-C10 hydrocarbon group, and R_{13} represents an aryl group or a heteroaryl group; and

the block chain C2 has a repeating unit represented by Formula (III) which may be the same as or different from C1,
wherein the copolymer forms a microphase-separated structure.

78-95. (Canceled)

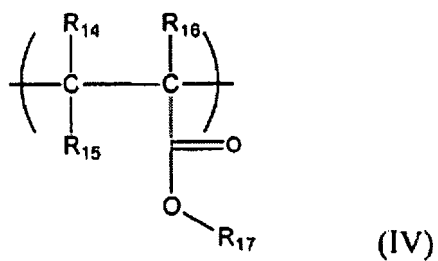
96. (Previously Presented) The polymer solid electrolyte according to claim 26, wherein the copolymer further comprises a repeating unit derived from a polymerizable unsaturated monomer, which is different from the repeating units represented by Formula (I) and Formula (II).

97. (Previously Presented) The polymer solid electrolyte according to claim 96, wherein the repeating unit derived from polymerizable unsaturated monomers is at least one repeating unit selected from the group consisting of units represented by Formula (III)



wherein each of R₁₀ to R₁₂ independently represents a hydrogen atom or a C1-C10 hydrocarbon group, and R₁₃ represents an aryl group or a heteroaryl group;

and units represented by Formula (IV)



wherein each of R_{14} to R_{16} independently represents a hydrogen atom or a C1-C10 hydrocarbon group; R_{14} and R_{16} may bond to one another to form a ring; and R_{17} represents a C1-C12 alkyl group, an aryl group, an alicyclic hydrocarbon group, or a heterocyclic group.